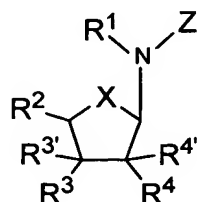


### Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of claims:

1. (Currently Amended) A method of treating or preventing a disease resulting from a somatic nonsense mutation in DNA or RNA comprising administering to a patient in need thereof an effective amount of a compound having the structure:



I

or a pharmaceutically acceptable salt, hydrate, solvate, clathrate, racemate or stereoisomer thereof, wherein:

Z is substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl;

X is CH<sub>2</sub>, O, S or NH;

R<sup>1</sup> is hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl;

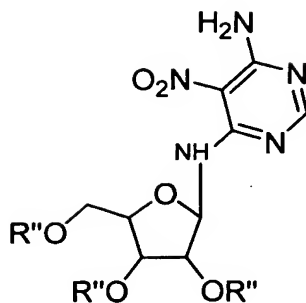
R<sup>2</sup> is substituted or unsubstituted alkyl, carboxy, amido, acyl, alkylcarbonyl, halogen, a biohydrolyzable group, OP(O)<sub>3</sub><sup>2-</sup>, O[P(O)<sub>3</sub>]<sub>2</sub><sup>3-</sup>, O[P(O)<sub>3</sub>]<sub>3</sub><sup>4-</sup>, N<sub>3</sub>, CH<sub>2</sub>-NR<sub>6</sub>R<sub>7</sub> or CH<sub>2</sub>-OR<sup>6</sup>;

R<sup>3</sup>, R<sup>3'</sup>, R<sup>4</sup> and R<sup>4'</sup> are at each occurrence independently OR<sup>7</sup>, OR<sup>8</sup>, hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted

heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylcarbonyl, a biohydrolyzable group, or R<sup>3</sup> and R<sup>4</sup> taken together form a bond, or R<sup>3</sup> and R<sup>4</sup> taken together with the atoms to which they are attached form a substituted or unsubstituted heterocyclo, or R<sup>3</sup> and R<sup>3'</sup> and/or R<sup>4</sup> and R<sup>4'</sup> taken together with the carbon to which they are attached form C(=O); and

R<sup>6</sup>, R<sup>7</sup> and R<sup>8</sup> are at each occurrence independently hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylcarbonyl, a biohydrolyzable group, or R<sup>3</sup> and R<sup>4</sup> taken together with the atoms to which they are attached form a substituted or unsubstituted heterocyclo.

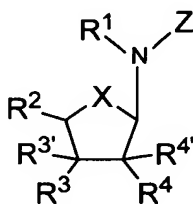
2. (Original) The method of claim 1, wherein the compound, or a pharmaceutically acceptable salt, hydrate, solvate, clathrate or stereoisomer thereof, is administered as a composition comprising the compound and a pharmaceutically acceptable carrier or diluent.
3. (Original) The method of claim 1, wherein the administration is intravenous.
4. (Original) The method of claim 1, wherein Z is monocyclic.
5. (Original) The method claim 1, wherein Z is substituted or unsubstituted pyrimidinyl.
6. (Original) The method claim 1, wherein X is O.
7. (Original) The method of claim 1, wherein the compound has the structure:



or a pharmaceutically acceptable salt, hydrate, solvate, clathrate, racemate or stereoisomer thereof, wherein each occurrence of R'' is independently hydrogen,  $\text{OP}(\text{O}_3)^{-2}$ ,  $\text{C}(=\text{O})\text{CH}_3$  or a biohydrolyzable group.

8. (Original) The method of claim 1, wherein each occurrence of R'' is hydrogen.

9. (Currently Amended) A method of treating or preventing cancer associated with a nonsense mutation in a human comprising administering to a human in need thereof an effective amount of a compound having the structure:



I

or a pharmaceutically acceptable salt, hydrate, solvate, clathrate, racemate or stereoisomer thereof, wherein:

Z is substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl;

X is  $\text{CH}_2$ , O, S or NH;

R<sup>1</sup> is hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted

heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl;

$R^2$  is substituted or unsubstituted alkyl, carboxy, amido, acyl, alkylcarbonyl, halogen, a biohydrolyzable group,  $OP(O)_3^{2-}$ ,  $O[P(O)_3]_2^{3-}$ ,  $O[P(O)_3]_3^{4-}$ ,  $N_3$ ,  $CH_2-NR_6R_7$  or  $CH_2-OR^6$ ;

$R^3$ ,  $R^{3'}$ ,  $R^4$  and  $R^{4'}$  are at each occurrence independently  $OR^7$ ,  $OR^8$ , hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylcarbonyl, a biohydrolyzable group, or  $R^3$  and  $R^4$  taken together form a bond, or  $R^3$  and  $R^4$  taken together with the atoms to which they are attached form a substituted or unsubstituted heterocyclo, or  $R^3$  and  $R^{3'}$  and/or  $R^4$  and  $R^{4'}$  taken together with the carbon to which they are attached form  $C(=O)$ ; and

$R^6$ ,  $R^7$  and  $R^8$  are at each occurrence independently hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylcarbonyl, a biohydrolyzable group, or  $R^3$  and  $R^4$  taken together with the atoms to which they are attached form a substituted or unsubstituted heterocyclo.

10. (Original) The method of claim 9, wherein the administration is intravenous.

11. (Original) The method of claim 9, wherein the cancer is of the head and neck, eye, skin, mouth, throat, esophagus, chest, bone, blood, lung, colon, sigmoid, rectum, stomach, prostate, breast, ovaries, kidney, liver, pancreas, brain, intestine, heart or adrenals.

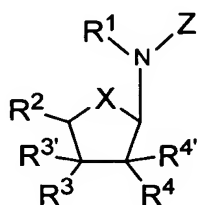
12. (Original) The method of claim 9, wherein the compound, or a pharmaceutically acceptable salt, hydrate, solvate, clathrate or stereoisomer thereof, comprises a pharmaceutically acceptable carrier or diluent.

13. (Original) The method of claim 9, wherein the cancer is a solid tumor.

14. (Original) The method of claim 9, wherein the cancer is sarcoma, carcinoma, fibrosarcoma, myxosarcoma, liposarcoma, chondrosarcoma, osteogenic sarcoma, chordoma, angiosarcoma, endotheliosarcoma, lymphangiosarcoma, lymphangioendotheliosarcoma, synovioma, mesothelioma, Ewing's tumor, leiomyosarcoma, rhabdomyosarcoma, colon carcinoma, pancreatic cancer, breast cancer, ovarian cancer, prostate cancer, squamous cell carcinoma, basal cell carcinoma, adenocarcinoma, sweat gland carcinoma, sebaceous gland carcinoma, papillary carcinoma, papillary adenocarcinomas, cystadenocarcinoma, medullary carcinoma, bronchogenic carcinoma, renal cell carcinoma, hepatoma, bile duct carcinoma, choriocarcinoma, seminoma, embryonal carcinoma, Wilms' tumor, cervical cancer, testicular tumor, lung carcinoma, small cell lung carcinoma, bladder carcinoma, epithelial carcinoma, glioma, astrocytoma, medulloblastoma, craniopharyngioma, ependymoma, Kaposi's sarcoma, pinealoma, hemangioblastoma, acoustic neuroma, oligodendroglioma, menangioma, melanoma, neuroblastoma, retinoblastoma, a blood-born tumor or multiple myeloma.

15. (Original) The method of claim 9, wherein the cancer is acute lymphoblastic leukemia, acute lymphoblastic B-cell leukemia, acute lymphoblastic T-cell leukemia, acute myeloblastic leukemia, acute promyelocytic leukemia, acute monoblastic leukemia, acute erythroleukemic leukemia, acute megakaryoblastic leukemia, acute myelomonocytic leukemia, acute nonlymphocytic leukemia, acute undifferentiated leukemia, chronic myelocytic leukemia, chronic lymphocytic leukemia, hairy cell leukemia, or multiple myeloma.

16. (Currently Amended) A method of treating or preventing a disease associated with a nonsense mutation of the p53 gene comprising administering to a patient in need thereof an effective amount of a compound having the structure:



I

or a pharmaceutically acceptable salt, hydrate, solvate, clathrate, racemate or stereoisomer thereof, wherein:

Z is substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl;

X is CH<sub>2</sub>, O, S or NH;

R<sup>1</sup> is hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl;

R<sup>2</sup> is substituted or unsubstituted alkyl, carboxy, amido, acyl, alkylcarbonyl, halogen, a biohydrolyzable group, OP(O)<sub>3</sub><sup>2-</sup>, O[P(O)<sub>3</sub>]<sub>2</sub><sup>3-</sup>, O[P(O)<sub>3</sub>]<sub>3</sub><sup>4-</sup>, N<sub>3</sub>, CH<sub>2</sub>-NR<sub>6</sub>R<sub>7</sub> or CH<sub>2</sub>-OR<sup>6</sup>;

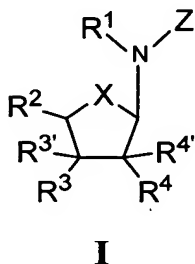
R<sup>3</sup>, R<sup>3'</sup>, R<sup>4</sup> and R<sup>4'</sup> are at each occurrence independently OR<sup>7</sup>, OR<sup>8</sup>, hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylcarbonyl, a biohydrolyzable group, or R<sup>3</sup> and R<sup>4</sup> taken together form a bond, or R<sup>3</sup> and R<sup>4</sup> taken together with the atoms to which they are attached form a substituted or unsubstituted heterocyclo, or R<sup>3</sup> and R<sup>3'</sup> and/or R<sup>4</sup> and R<sup>4'</sup> taken together with the carbon to which they are attached form C(=O); and

R<sup>6</sup>, R<sup>7</sup> and R<sup>8</sup> are at each occurrence independently hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylcarbonyl, a biohydrolyzable group, or R<sup>3</sup> and R<sup>4</sup> taken together with the atoms to which they are attached form a substituted or unsubstituted heterocyclo.

17. (Original) The method of claim 16, wherein the administration is intravenous.

18. (Original) The method of claim 16, wherein the disease is sarcoma, carcinomas, fibrosarcoma, myxosarcoma, liposarcoma, chondrosarcoma, osteogenic sarcoma, chordoma, angiosarcoma, endotheliosarcoma, lymphangiosarcoma, lymphangioendotheliosarcoma, synovioma, mesothelioma, Ewing's tumor, leiomyosarcoma, rhabdomyosarcoma, colon carcinoma, pancreatic cancer, breast cancer, ovarian cancer, prostate cancer, squamous cell carcinoma, basal cell carcinoma, adenocarcinoma, sweat gland carcinoma, sebaceous gland carcinoma, papillary carcinoma, papillary adenocarcinomas, cystadenocarcinoma, medullary carcinoma, bronchogenic carcinoma, renal cell carcinoma, hepatoma, bile duct carcinoma, choriocarcinoma, seminoma, embryonal carcinoma, Wilms' tumor, cervical cancer, testicular tumor, lung carcinoma, small cell lung carcinoma, bladder carcinoma, epithelial carcinoma, glioma, astrocytoma, medulloblastoma, craniopharyngioma, ependymoma, Kaposi's sarcoma, pinealoma, hemangioblastoma, acoustic neuroma, oligodendroglioma, menangioma, melanoma, neuroblastoma or retinoblastoma.

19. (Currently Amended) A method of inhibiting the growth of a cancer cell comprising contacting ~~the~~ a cancer cell having a nonsense mutation in its DNA or RNA with an effective amount of a compound having the structure:



or a pharmaceutically acceptable salt, hydrate, solvate, clathrate, racemate or stereoisomer thereof, wherein:

Z is substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl;

X is CH<sub>2</sub>, O, S or NH;

R<sup>1</sup> is hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted

heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl;

$R^2$  is substituted or unsubstituted alkyl, carboxy, amido, acyl, alkylcarbonyl, halogen, a biohydrolyzable group,  $OP(O)_3^{2-}$ ,  $O[P(O)_3]_2^{3-}$ ,  $O[P(O)_3]_3^{4-}$ ,  $N_3$ ,  $CH_2-NR_6R_7$  or  $CH_2-OR^6$ ;

$R^3$ ,  $R^{3'}$ ,  $R^4$  and  $R^{4'}$  are at each occurrence independently  $OR^7$ ,  $OR^8$ , hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylcarbonyl, a biohydrolyzable group, or  $R^3$  and  $R^4$  taken together form a bond, or  $R^3$  and  $R^4$  taken together with the atoms to which they are attached form a substituted or unsubstituted heterocyclo, or  $R^3$  and  $R^{3'}$  and/or  $R^4$  and  $R^{4'}$  taken together with the carbon to which they are attached form  $C(=O)$ ; and

$R^6$ ,  $R^7$  and  $R^8$  are at each occurrence independently hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocyclo, substituted or unsubstituted arylalkyl, substituted or unsubstituted heteroarylalkyl, substituted or unsubstituted cycloalkylalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylcarbonyl, a biohydrolyzable group, or  $R^3$  and  $R^4$  taken together with the atoms to which they are attached form a substituted or unsubstituted heterocyclo, with the proviso that the cancer cell is not a leukemia cancer cell.

20-28. (Canceled)